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## RESEARCH ARTICLE



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# Psychological distress and its associations with psychosocial work environment factors in four professional groups: A cross-sectional study

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**Abstract**

This study aimed to explore associations between psychosocial work environment factors and psychological distress in four groups of professionals in Norway. Eight hundred fifty-six professionals participated in this cross-sectional study 6 years after graduation. Data were analyzed with linear and logistic regression analyses. For the sample as a whole, higher psychological distress was associated with higher demands, lower support, lower job satisfaction, more work-home interaction problems, and lower coping in the job. Work-home interaction problems increased the likelihood of having case-level psychological distress. The strength of associations between psychological distress and other factors, such as demands, support, and coping in the job, varied by professional group. In conclusion, problems concerned with work-home interaction were generally associated with higher psychological distress. Between professional groups, other independent variables were differently associated with psychological distress. Work environment factors should receive continued attention in efforts to promote mental health.

**KEYWORDS**

allied health, mental disorders, mental health, nursing, occupational health, occupational therapy, physiotherapy, psychological distress, social work, surveys and questionnaires, work environment

**Key points**

- In the sample as a whole and for most of the professional groups, problems concerned with the interaction between work and home significantly predicted higher psychological distress
- Associations between psychological distress and other psychosocial work environment factors, such as demands, support, and coping in the job, varied by professional group
- Assessing work environment factors to better understand variations in psychological distress is relevant among nurses, physiotherapists, and social workers, and appears to be particularly useful among occupational therapists

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## 1 | INTRODUCTION

Mental health has been defined as a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community (World Health Organization, 2018). In general, mental health is created, sustained, and challenged by the interplay between various forces. Common environmental risk factors for poor mental health concern interpersonal, economic, and socio-structural factors (Bronfenbrenner, 1986). These factors include unemployment and financial insecurity (Gili et al., 2013), loneliness, bullying and interpersonal conflict (Kendler et al., 2003; Norwegian Institute of Public Health, 2016), and stressful life events and trauma, such as assault, rape and war, losing a job, or the death of a close family member or friend (Amstadter et al., 2013; Kendler & Gardner, 2016).

With regards to sociodemographic characteristics, women have a higher prevalence of all mental disorders than men, with the exception of substance use disorders, for which the prevalence is twice as high among men (Alonso et al., 2004; Rehm & Shield, 2019). Young adults (<34 years) have been found to have a 12-month prevalence of mental disorders that is twice as high compared to older adults (>65 years; Alonso et al., 2004; Jacobi et al., 2015). Together, such findings demonstrate that analyses seeking to establish associations between mental health and other factors should consider whether adjustments for age and gender are needed.

While psychological distress is not merely equivalent to “poor mental health,” it may be considered a narrower concept more specifically addressing the emotional burden that is often experienced in common mental disorders, such as anxiety and depression (Goodwin et al., 2013). Some researchers have examined differences in psychological distress and related concepts between professional groups and have found diverging results. For example, Cipolotti et al. (2021) examined psychological distress among healthcare workers in the United Kingdom during the COVID-19 pandemic and found no systematic differences between professional groups. In a Norwegian longitudinal study, health professionals (nurses, occupational therapists, and physiotherapists) improved their distress levels significantly between graduation and the three-year follow-up, while the trend of improvement was not statistically significant for teachers and social work professionals (Geirdal et al., 2019). Related concepts, such as burnout, have also been found to differ between professional groups. In a large and diverse sample of professional workers in Denmark, social workers and midwives had high levels of both work-related and client-related burnout (Borritz et al., 2006). In comparison, while having high levels of work-related burnout, doctors and nurses working in hospitals had lower levels of client-related burnout, whereas senior doctors, district nurses, and people working in administrative or supervisory positions had lower levels of both types of burnout (Borritz et al., 2006). Together, these studies indicate that there may be differences in psychological distress levels between professional groups, while differences may also depend on the work context or type of work conducted in the professional roles.

Psychosocial work characteristics imply factors involved with psychological processes linked to the social environment of work that may be important for health or illness (Stansfeld & Candy, 2006). For professional employees, aspects of the culture and the psychosocial work environment seem to be of importance for their work practice (Rio et al., 2021; Shahar et al., 2019), job satisfaction (Shin et al., 2020), and also for their own their mental health (Ness et al., 2021). Several studies and reviews have found that high-strain jobs, characterized by low employee control and high demands, are associated with higher stress levels (Häusser et al., 2010; Nieuwenhuijsen et al., 2010; Zeike et al., 2018), and also associated with sick leave from work (de Vries et al., 2018; Mather et al., 2015; Mortensen et al., 2017). However, employees' attitudes towards the job is also of importance. While involvement in work and productive activity is in line with the World Health Organization's definition of mental health (Herrman et al., 2005), over-involvement in work may produce poorer mental health (Niedhammer et al., 2006). In a recent example, Skogen et al. (2019) found that employees with high ratings on “overcommitment to work,” in particular when combined with a high imbalance between perceived efforts and rewards in the job, had higher odds of having alcohol-related problems compared to employees with lower overcommitment.

In view of the evidence, the notion that psychosocial work environment factors are important for employees' mental health is well established. In addition, differences in levels and trajectories of psychological distress between professional groups suggest that associations between work environment factors and distress may differ between groups of professionals. While some previous studies have examined differences in psychological distress between professional groups (Borritz et al., 2006; Cipolotti et al., 2021; Geirdal et al., 2019), we have not been able to locate studies that have examined associations between work environment factors and psychological distress in a comparative perspective, that is, analyzing associations within several professional groups separately. Herein lies this study's novel approach. Thus, the aim of this study was to explore the associations between aspects of the psychosocial work environment and psychological distress in four groups of professionals in Norway.

## 2 | METHODS

### 2.1 | Design and data collection

The data were extracted from the STUDDATA database, which contains self-reported data from a range of professional groups over a nine-year period. For the current study, a cross-sectional design was employed in the exploration of associations between psychosocial work environment factors and psychological distress in four groups of professionals 6 years after graduation. Using data from 6 years after graduation allowed us to examine a group of professionals assumed to be well established in their respective fields of practice, yet relatively early in their careers as health and social work professionals.

The participants were recruited from six different Norwegian higher education institutions, with the majority from Oslo.

## 2.2 | Inclusion criteria

Inclusion in the STUDDATA project was based on informed and voluntary consent. In addition, the inclusion of participants in this sub-study required that participants were health or social work professionals and that they had responded to all questions used in the study; that is, having no missing data on the relevant variables at the relevant time point.

## 2.3 | Measures

### 2.3.1 | Sociodemographic variables

The demographic variables used in this study were age in years (continuous) and gender (male and female). As psychological distress has been found to be lower in persons of mature age (compared to persons of younger age) and among men (compared to women; Geirdal et al., 2021), age and gender were included as control variables. As a result, any detected associations between psychosocial work environment factors and psychological distress would not be confounded by age and gender. None of the employed research measurements, as described below, are under license. Thus, we had permission to use all of the relevant data.

### 2.3.2 | Work environment factors

Based on Karasek's Job Demands and Control (JDC) model (Karasek & Theorell, 1990), three variables are constructed based on responses to the Job Content Questionnaire (JCQ; Karasek et al., 1998). The instrument has been used in a range of national and international studies of psychosocial work environment factors (Geirdal et al., 2019; Häusser et al., 2010). *Demands* refer to the work pressure and the workload experienced in the job, and was measured with five items (Cronbach's  $\alpha = 0.77$ ). *Control*, sometimes coined decision latitude, refers to the level of control the employee has over decisions that are important to their work, as well as the possibility of developing and using personal skills in the job. This variable was measured with nine items (Cronbach's  $\alpha = 0.75$ ). *Support* concerns the perceived support from both supervisors and colleagues at work, and was measured with four items (Cronbach's  $\alpha = 0.79$ ). Higher scores indicate higher demands, control, and support, respectively. The JDC model proposes that the combination of demands and control in the job produces four basic job types, often denoted as active, passive, high-strain, and low-strain jobs. To a certain degree, and in very general terms, these job types may be used to characterize the psychosocial work environments of different types of jobs and professional groups (Bonsaksen, Thørrisen, et al., 2019; Karasek & Theorell, 1990).

### 2.3.3 | Job involvement

Job involvement is defined as the degree to which a person's work performance affects his or her self-esteem (Lodahl, 1964). The six-item version of the Job Involvement Scale (Lodahl & Kejnar, 1965) was used to measure job involvement, and a higher total score indicates lower involvement. Cronbach's  $\alpha$ , which indicates the internal consistency, was acceptable in this sample ( $\alpha = 0.70$ ).

### 2.3.4 | Job satisfaction

To assess job satisfaction, the 14-item version of the Work Orientations II Module was included (Kraut & Ronen, 1975). The 14 items are linked to paid work and evaluate the individual's satisfaction with seven aspects of their current job: job security, high income, good advancement opportunities, an interesting job, a job that allows someone to work independently, a job that allows someone to help other people, and a job that is useful to society (Hattrup et al., 2007). Higher scores indicate lower overall satisfaction with the job. Cronbach's  $\alpha$  for the scale was 0.73.

### 2.3.5 | Psychological work factors

The General Nordic Questionnaire for Psychological and Social Factors at Work (QPS<sub>Nordic</sub>; Dallner et al., 2000), is an instrument which has been used to measure psychological and social aspects at work in several large-scale projects (Björklund et al., 2007), and has shown good psychometric properties (Wännström et al., 2009). The QPS<sub>Nordic</sub> measures different aspects using two-item subscales, among them work-home interaction (whether the job affects private life negatively, or vice versa; inter-item correlation = 0.43), coping in the job (inter-item correlation = 0.51), and collaboration with coworkers (inter-item correlation = 0.29), and these three aspects were included in this study. Higher scores indicate more work-home interaction problems, better coping in the job, and better collaboration with coworkers.

### 2.3.6 | Psychological distress

Psychological distress was operationalized and measured by scores on the 12-item General Health Questionnaire (GHQ-12), which is a widely used self-report measure of psychological distress (Goldberg et al., 1997; Goodwin et al., 2013). A large number of studies in the general adult population, clinical populations, work populations, and student populations have provided support for its validity across samples and contexts (Goodwin et al., 2013; Aalto et al., 2012). Six items of the GHQ-12 are phrased positively (e.g. "able to enjoy day-to-day activities"), while six items are phrased as a negative experience (e.g. "felt constantly under strain"). On each item, the person indicates the degree to which the item content has been experienced during

the two preceding weeks, using four response categories (“less than usual,” “as usual,” “more than usual,” or “much more than usual”). Items are scored between 0 and 3, and positively formulated items are recoded prior to analysis. As a result, the GHQ-12 scale score range is 0–36, with higher scores indicating more psychological distress. In this study, Cronbach's  $\alpha$  for the 12 scale items was 0.86. Case-level scores (the person indicating “more than usual” or “much more than usual” on at least four of the 12 items) indicate a level of psychological distress where treatment may be needed (Goldberg et al., 1998).

## 2.4 | Statistical analysis

Continuous variables were described with means (M) and standard deviations (SD), and categorical data with counts and percentages within groups. Group differences regarding age and psychosocial work environment factors were examined with one-way analysis of variance (ANOVA) and with  $\chi^2$ -tests for gender proportions.

Crude and adjusted associations with psychological distress (GHQ continuous measure) were examined with single and multiple linear regression analysis. Variables with a statistically significant bivariate association with the GHQ score in the total sample were included in the adjusted analyses for all groups. Standardized  $\beta$  values were used as an effect size and interpreted according to Cohen (1992), differentiating between small (0.30 or lower), medium (0.31–0.50), and large (0.51 or higher) effect sizes. Crude and adjusted associations with case-level psychological distress (GHQ categorical measure) were examined with binary logistic regression analysis. Variables with a statistically significant bivariate association with case-level psychological distress in the total sample were included in the adjusted analyses for all groups. Odds ratio (OR) was used as an effect size, and the 95% confidence interval (CI) of the OR was reported. The analyses were performed for the total sample and for each of the professional groups separately. Results with a corresponding *P*-value lower than 0.05 were interpreted as statistically significant.

## 2.5 | Ethics

All participants provided signed informed consent, and were informed that participation in the study was voluntary and that their consent to participate could be withdrawn at any time. Approval for conducting the study was obtained from the national data protection agency, the Norwegian Center for Research Data (protocol code 20409).

# 3 | RESULTS

## 3.1 | Participant characteristics

In total, 856 persons were included in the study. Of these, 386 (45.1%) were nurses, 84 (9.8%) were occupational therapists,

157 (18.3%) were physiotherapists, and 229 (26.8%) were social workers. A summary of the sample characteristics is displayed in Table 1. There were statistically significant group differences with regards to age (mean age ranging between 37 years for social workers and 32 years for physiotherapists) and gender (proportion of females ranging between 92% for nurses and 76% for physiotherapists). Further, group differences were significant with regards to demands (nurses with highest scores, physiotherapists with lowest scores), control (nurses with lowest scores, physiotherapists with highest scores), and support (nurses with lowest scores, physiotherapists with highest scores). There were no significant group differences regarding levels of psychological distress (mean GHQ score ranging between 10.0 [physiotherapists] and 11.0 [occupational therapists]), nor regarding proportions with case-level psychological distress (proportions ranging between 16% [physiotherapists] and 19% [social workers]).

## 3.2 | Associations with psychological distress

Age, gender, and job involvement did not show a significant bivariate association with the continuous GHQ score and were therefore not included in the subsequent linear regression analysis. For the total sample, the multiple regression analysis (displayed in Table 2) showed that higher psychological distress was significantly associated with higher demands and lower support at work, lower job satisfaction, more work-home interaction problems, and lower coping in the job. Among nurses and physiotherapists, higher psychological distress was significantly associated with more work-home interaction problems and lower coping in the job. Among occupational therapists, higher psychological distress was significantly associated with higher demands at work and more work-home interaction problems. Among social workers, higher psychological distress was significantly associated with higher demands and lower support at work. More of the GHQ variance was explained by the employed independent variables for occupational therapists (31.9%), compared to other professional groups (16.0%–21.4%).

## 3.3 | Associations with case-level psychological distress

Age, gender, control, support, job involvement, coping in the job, and collaboration did not show significant bivariate associations with the case-level GHQ score, and these variables were therefore not included in the subsequent multiple logistic regression analysis. For the total sample, the multiple logistic regression model (displayed in Table 3) showed that higher odds of having case-level psychological distress were significantly associated with higher job demands, lower job satisfaction, and more work-home interaction problems. For nurses, higher odds of case-level psychological distress were significantly associated with lower job satisfaction and more work-home interaction problems. For occupational therapists in particular, but also for physiotherapists, higher odds of case-level psychological

**TABLE 1** Characteristics of the sample and of each of the four professional groups

Variables	Total sample	Nurses	OTs	PTs	SWs	P
Sociodemographics	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	
Age (years)	34.4 (6.8)	34.1 (6.2)	33.7 (6.7)	31.8 (3.3)	36.8 (8.7)	<0.001
Gender	n (%)	n (%)	n (%)	n (%)	n (%)	
Male	113 (13.2)	32 (8.3)	13 (15.5)	38 (24.2)	30 (13.1)	<0.001
Female	743 (86.8)	354 (91.7)	71 (84.5)	119 (75.8)	199 (86.9)	
Work environment factors	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	
Demands	13.4 (2.6)	14.1 (2.6)	12.4 (2.6)	12.3 (2.1)	13.5 (2.7)	<0.001
Control	26.9 (3.3)	26.0 (3.3)	27.1 (3.0)	27.9 (3.0)	27.6 (3.3)	<0.001
Support	12.4 (2.0)	12.2 (2.0)	12.5 (1.8)	12.8 (1.7)	12.4 (2.2)	<0.05
Job involvement and satisfaction	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	
Job involvement	16.1 (2.8)	16.1 (2.9)	16.2 (2.7)	16.3 (2.7)	16.0 (2.7)	0.70
Job satisfaction	17.8 (4.0)	17.9 (3.9)	18.6 (3.9)	17.4 (4.0)	17.6 (3.9)	0.19
Psychological work factors	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	
Work-home interaction	2.2 (0.8)	2.2 (0.8)	2.2 (0.7)	2.2 (0.8)	2.2 (0.8)	0.63
Coping in the job	4.0 (0.5)	4.1 (0.5)	4.0 (0.4)	4.0 (0.5)	4.0 (0.5)	0.10
Collaboration	1.7 (2.7)	1.7 (0.6)	1.7 (0.6)	1.7 (0.7)	1.7 (0.6)	0.77
Psychological distress	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	
GHQ score	10.6 (4.6)	10.7 (4.6)	11.0 (4.3)	10.0 (4.0)	10.7 (4.9)	0.27
	n (%)	n (%)	n (%)	n (%)	n (%)	
GHQ case-level score	147 (17.2)	65 (16.8)	14 (16.7)	25 (15.9)	43 (18.8)	0.90

Note: Work environment factors are measured with the Job Demand Control questionnaire. Job involvement is measured with the Job Involvement questionnaire, while job satisfaction is measured with the Work Orientation measure. Psychological work factors are measured with the General Nordic Questionnaire for Psychological and Social Factors at Work (QPS Nordic). Psychological distress is measured with the General Health Questionnaire (GHQ). Statistical tests of group differences are ANOVA F-test (continuous variables) and  $\chi^2$ -tests (categorical variables). OT, occupational therapist; PT, physiotherapist; SW, social worker.

distress were significantly associated with more work-home interaction problems. For social workers, higher odds of case-level psychological distress were significantly associated with higher job demands.

## 4 | DISCUSSION

This study aimed to explore the associations between aspects of the psychosocial work environment and psychological distress among young professionals in four health and social work professions in Norway. Six years after graduation, levels of psychological distress were not significantly different between the participating nurses, occupational therapists, physiotherapists, and social workers. A range of work environment and psychosocial factors at work were significantly associated with psychological distress in the sample. However, re-running the analyses for each professional group demonstrated both similarities as well as differences with regards to factors of importance for psychological distress.

Sustaining mental health is one of the major challenges for public health globally (World Health Organization, 2013), with reports of 17.6% of the global population experiencing a common mental disorder during the last year and 29.2% having experienced a common mental disorder during their lifetime (Steel et al., 2014). Using the

GHQ in the current study, the prevalence of 17.2% (range 15.9%–18.8%) for case-level psychological distress appears to reflect well the global estimates of common mental disorders. In the Norwegian general population, recent prevalence estimates for current self-reported mental disorders have been found to be 6.6% for anxiety (Bonsaksen, Heir, et al., 2019) and 8.1% for depression (Bonsaksen et al., 2018), while having anxiety and/or depression – indicative of substantial psychological distress – was found among 14.1% of the sample. In line with previous studies (Endsley et al., 2017; Reuter & Härter, 2001), these results provide additional support for the GHQ as a relevant screening instrument for mental health problems. The results also indicate similar levels of psychological distress among participants in the four professional groups, and similar proportions of persons with case-level psychological distress. These results are consistent with those of a recent study of psychological distress in groups of healthcare professionals during the COVID-19 pandemic (Cipolotti et al., 2021), while somewhat diverging from a study demonstrating different change patterns between professional groups during the time between graduation and a three-year follow-up (Geirdal et al., 2019). Possibly, as may be inferred by a previous study of burnout (Borritz et al., 2006), differences in distress levels between professional groups may also depend on the specific work contexts involved. In cases where work contexts are similar, differences between professional groups may be small.

**TABLE 2** Associations with psychological distress (GHQ ratings) in the sample and in each of the four professional groups

	Total sample	Nurses	Occupational Therapists	Physiotherapists	Social workers
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
Work environment factors					
Control	0.01	−0.02	−0.14	0.11	0.05
Demands	0.09*	0.04	0.28*	−0.08	0.18*
Support	−0.11**	−0.10	0.04	−0.03	−0.24**
<b>R<sup>2</sup> change</b>	<b>7.8%</b>	<b>6.6%</b>	<b>18.1%</b>	<b>1.4%</b>	<b>16.8%</b>
Job involvement and satisfaction					
Job satisfaction	0.10*	0.11	0.09	0.07	0.10
<b>R<sup>2</sup> change</b>	<b>1.6%</b>	<b>1.4%</b>	<b>0.4%</b>	<b>2.0%</b>	<b>0.9%</b>
Psychological work factors					
Work-home interaction	0.22***	0.22***	0.37**	0.29**	0.11
Coping in the job	−0.15***	−0.16**	−0.06	−0.27**	−0.05
Collaboration	0.05	0.05	0.10	0.11	0.06
<b>R<sup>2</sup> change</b>	<b>7.7%</b>	<b>8.0%</b>	<b>13.5%</b>	<b>17.9%</b>	<b>1.9%</b>
<b>Total explained variance</b>	<b>17.1%</b>	<b>16.0%</b>	<b>31.9%</b>	<b>21.4%</b>	<b>19.6%</b>

Note: Psychological distress is measured with the General Health Questionnaire (GHQ). Work environment factors are measured with the Job Demand Control questionnaire. Job satisfaction is measured with Work Orientation measure. Psychological work factors are measured with the General Nordic Questionnaire for Psychological and Social Factors at Work (QPS Nordic). Table content is standardized  $\beta$  values taken from hierarchical multiple linear regression analyses.

\* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ .

**TABLE 3** Associations with case-level psychological distress in the sample and in each of the four professional groups

	Total sample	Nurses	Occupational therapists	Physiotherapists	Social workers
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Work environment factors					
Demands	1.09* (1.01–1.18)	1.12 (0.99–1.27)	1.18 (0.89–1.56)	0.86 (0.66–1.12)	1.18* (1.02–1.37)
Support	0.98 (0.88–1.09)	0.94 (0.80–1.10)	0.99 (0.67–1.44)	1.15 (0.86–1.53)	0.92 (0.75–1.13)
Job involvement and satisfaction					
Job satisfaction	1.10*** (1.04–1.16)	1.11* (1.02–1.20)	1.16 (0.98–1.38)	1.07 (0.95–1.21)	1.07 (0.96–1.19)
Psychological work factors					
Work-home interaction	2.07*** (1.57–2.74)	1.95** (1.30–2.94)	5.06** (1.66–15.45)	2.62** (1.34–5.11)	1.57 (0.91–2.70)
<b>Nagelkerke R<sup>2</sup> Cox Snell R<sup>2</sup></b>	<b>13.6% (8.2%)</b>	<b>15.3% (9.0%)</b>	<b>32.4% (20.6%)</b>	<b>13.3% (7.8%)</b>	<b>14.3% (8.9%)</b>

Note: Psychological distress is measured with the General Health Questionnaire. Work environment factors are measured with the Job Demand Control questionnaire. Job satisfaction is measured with the Work Orientation measure. Psychological work factors are measured with the General Nordic Questionnaire for Psychological and Social Factors at Work (QPS Nordic). Table content is the odds ratio (OR) plus 95% confidence intervals (CI) taken from multiple logistic regression analyses, adjusted for all employed variables. \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ .

For the sample as a whole, several associations were found between individual predictors and psychological distress. Case-level psychological distress was associated with higher psychological demands in the work, lower job satisfaction, and higher levels of work-home interaction problems. The same factors, in addition to lower support and lower coping in the job, were associated with higher psychological distress when measured with the continuous GHQ scale. These findings appear logical and are generally consistent with previous research (Häusser et al., 2010; Netterstrøm et al., 2008; Nieuwenhuijsen et al., 2010). However, according to Cohen (1992),

the strength of the associations were relatively weak overall ( $\beta \leq 0.22$ ), which is logical given that the effect sizes for the total sample averages the effects for the participants across professional groups. A notable exception is the finding for work-home interaction problems, for which a one-unit increase in scale ratings more than doubled the risk of experiencing case-level psychological distress. Thus, the overall findings suggest that problems in managing and balancing the demands at work with those at home is a powerful predictor of psychological distress among health and social work professionals.



Among the work environment factors significantly associated with psychological distress, some were common across several professional groups, while others were found to be more profession specific. While work-home interaction problems were significantly associated with higher psychological distress for nurses, physiotherapists, and – in particular – occupational therapists, this association was not significant for social workers. Instead, for social workers, demand and support variables proposed by Karasek and Theorell (1990) were systematically associated with their psychological distress. This is partly in accordance with the findings from the three-year follow up in Geirdal et al.'s (2019) study, where higher ratings on demand were associated with higher psychological distress in this group. For social workers, therefore, higher demands appear to predict higher psychological distress consistently over the first 6 years in professional practice. The possibility of reducing work demands and increasing the support between collegial social workers and between social workers and managers may have the potential to reduce social workers' psychological distress.

For nurses and physiotherapists, coping in the job was also directly associated with lower psychological distress (in addition to the already discussed association between work-home interaction problems and mental health). This might reflect higher levels of identification with the job among nurses and physiotherapists, compared to occupational therapists and social workers. Possibly, the finding may indicate that nurses and physiotherapists invest more of their self-esteem into their work. If so, experiencing problems in the job and feeling dissatisfied with one's own work may make nurses and physiotherapists more inclined to react with psychological symptoms, compared to professional groups where self-esteem is less strongly related to the work experience. This reasoning concerned with self-esteem contingencies, that is, the circumstances under which self-esteem relates more strongly to behaviors or performance, has been supported in theory (Deci & Ryan, 1995) and previous studies (Crocker & Wolfe, 2001; Ferris et al., 2010). In line with this interpretation, ways of reducing psychological distress among nurses and physiotherapists may include having them rely more on sources of self-esteem other than their work performance.

Consistent with the results for most of the professional groups, occupational therapists' psychological distress was strongly associated with work-home interaction problems. In fact, a one-unit increase on this scale increased fivefold the likelihood of being classified with case-level psychological distress. Similar to the results for social workers, and consistent with several research studies (Nieuwenhuijsen et al., 2010; Stansfeld & Candy, 2006), higher demands in the job were also associated with higher psychological distress among occupational therapists. Thus, among the work environment factors investigated in this study, reducing work demands and reducing work-home interaction problems appear to have potential to reduce psychological distress among occupational therapists. Possibly, job demands may be reduced by ensuring that the work is organized in ways that allow for upholding professional values and standards (Rio et al., 2021), and that work standards are not subject to conflicting demands. If the latter is the case, negotiating and coming

to agreement on work standards may be helpful. While it can be difficult for managers and occupational health services to directly assist occupational therapists in adjusting their work-home interaction, they can be vigilant towards occupational therapists' perception of job demands. Reducing job demands may possibly translate as well into a better balance between demands at work and at home, which in turn may reduce psychological distress.

As the prediction models were equal across groups, it was possible to compare the proportions of explained outcome variance between the groups. This study demonstrated that the employed work environment variables accounted for a greater proportion of the variance in psychological distress among occupational therapists (31.9%), compared to nurses, physiotherapists, and social workers (16.0%–21.4%). Occupational therapists represent a relatively young profession, compared to the other professional groups investigated in this study. In fact, occupational therapy was originally founded by nurses whose ideas about health promotion diverged from mainstream nursing theory and practice during and following World War I (Duncan, 2006). In Norwegian healthcare practice, occupational therapists are few in number, compared to other professional groups, and their line managers often have other professional backgrounds (Bonsaksen et al., 2020). It is possible that representing a small profession with relatively little power may contribute to an explanation of why occupational therapists' distress levels were so strongly tied to their psychosocial work environment. While assessing work environment in relation to psychological distress is relevant for all groups investigated in this study, it appears to be particularly useful when investigating psychological distress among occupational therapists.

#### 4.1 | Study limitations and future research

As this study employed a sample that was relatively modest in size, especially when used in the subgroup analyses (*n* ranging between 84 and 386), future studies may preferably ensure that group sizes are large enough to be representative of their respective populations. The representativity of the sample groups used in this study is difficult to verify. The cross-sectional nature of the employed data renders it impossible to verify causal attributions, and reversed causality is in some cases probable. For example, high psychological distress levels may contribute to lower coping in the job, as well as the opposite association. In the future, longitudinal studies, especially studies involving some form of work environment intervention, may potentially clarify the nature of some of the associations revealed in this study.

## 5 | CONCLUSION

The aim of this study was to explore the associations between aspects of the psychosocial work environment and psychological distress in four groups of health and social work professionals in Norway. For three of the four groups, problems concerned with

the interaction between work and home significantly predicted higher psychological distress. The strength of associations between psychological distress and other factors, such as demands and support experienced in the job and perceived coping in the job, varied by professional group. For occupational therapists, the employed work environment factors accounted for a substantial proportion of the variance in psychological distress, and they should therefore receive continued attention in efforts to investigate and promote mental health in the workplace.

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## CONFLICT OF INTEREST

There are no conflicts of interest to declare.

## AUTHOR CONTRIBUTIONS

Study design: Tore Bonsaksen, Per Nerdrum, Amy Østertun Geirdal.

Data collection: STUDDATA database.

Data analysis: Tore Bonsaksen.

Manuscript writing: Tore Bonsaksen.

Manuscript contributions and critical revisions: Tore Bonsaksen, Per Nerdrum, Amy Østertun Geirdal.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## ETHICS STATEMENT

All participants provided signed informed consent, and were informed that participation in the study was voluntary and that their consent to participate could be withdrawn at any time. Approval for conducting the study was obtained from the Norwegian Center for Research Data (reference 20409).

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